

EBSG meeting

ENTSO-E

3 September 2018

Agenda: Topics led by ENTSO-E

No.	Item	Time
2.	Imbalance settlement harmonisation proposal	40 min
3.	Pricing Proposal	80 min
4.	Activation purposes proposal	20 min
6.	aFRR implementation framework	45 min
7.	mFRR implementation framework	45 min

2. Imbalance settlement harmonization proposal

Frank Nobel
Convenor PT ISH

Balancing Stakeholder group meeting Sep 3rd

Survey on expected implementation

General overview

[Survey](#) sent to all members ENTSO-E: 36, representing 33 countries

No response from 3, Luxemburg responded by mail as survey not being relevant there

Relevant answers 29

Multiple choice survey, with predetermined answers but comments allowed.

Survey only for the purpose of sharing the views from the TSO and non-TSO members of the PT ISH, (and to further discuss options with NRAs), but cannot be used to claim a position of ENTSO-E nor of any TSO or third party involved in the development of the “ISH proposal”, on specific issues related to the EBGL or to the proposal.

Questions

Q1: What dispatching model do you intend to use: Central (CDM) or self-dispatching model (SDM)?

[Q2: Number of imbalance areas for which you will be connecting TSO?]

[Q3: Number of imbalance price areas for which you will be connecting TSO?]

Q4: What methodology for deriving imbalance prices from balancing energy prices do you intend to use (not current methodology): Volume-weighted average price (VWAP)? Marginal price (MP)?

[Q5: Details on methodology]

Q6: Do you intend to add a scarcity component? (YES/NO)

Q7: If you add a scarcity component, will it be for all ISPs (ALL)? Or for some ISPs (SOME)?

Q8: Do you intend to add an incentivising component? (YES, .../NO) If YES, what will it consist of?

Q9: Do you intend to apply for dual pricing? (YES/NO)

[Q10: If you intend to apply for dual pricing, on the basis of which condition(s) (a-e)?]

Answers

Q1: CDM 4; SDM 25

Q2: Number of imbalance areas for which you will be connecting TSO?

Q3: Number of imbalance price areas for which you will be connecting TSO?

Q4: VWAP 15; MP 10; other 4

[Q5: Details on methodology]

Q6: scarcity component? YES 17; NO 12

Q7: If Q6 YES: ALL ISPs 4; SOME ISPs 13

Q8: incentivising component? YES 5; NO 15; other 1; no response 8 (question was added later in process)

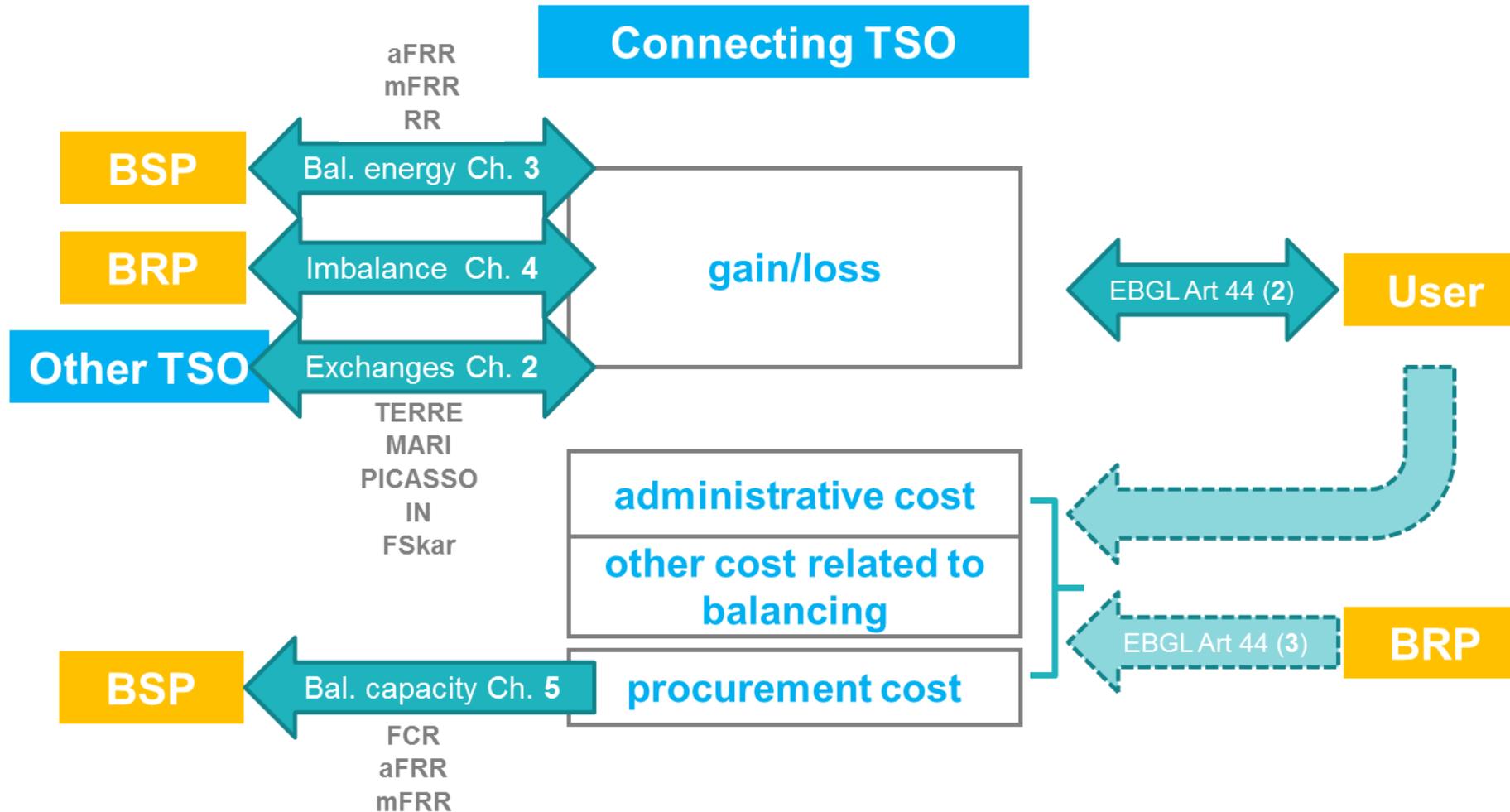
Q9: dual pricing? YES 12; NO 15; other 2

[Q10: If you intend to apply for dual pricing, on the basis of which condition(s) (a-e)?]

TSO	Q1	Q2	Q3	Q4	Q6	Q7	Q8	Q9	Q10
ADMIE	CDM	1 per bidding zone	1	VWAP	YES	ALL	NO	YES	b, d
APG	SDM	1	1	MP	YES	SOME	YES,	YES	c
AST	SDM	1	1	MP	NO		NO	NO	
ČEPS	SDM	1	1	MP/VWAP	YES	ALL	YES. For	YES	at least a, e
CGES									
CREOS		(Answered Not Applicable in mail)							
EirGrid & SONI	CDM	1	1	MP	YES	SOME		NO	N/A
Elering	SDM	1	1	VWAP	NO			NO	
ELES	SDM	1	1	VWAP	YES	SOME		YES	at least d,e
Elia	SDM	1	1	MP	YES	SOME		NO	
EMS	SDM	1	1	VWAP	YES	SOME	YES,	NO	
Energinet	SDM	1 per bidding zone	2	VWAP	NO			NO	
ESO	SDM	1	1	VWAP	YES	SOME	YES,	YES	b
Fingrid	SDM	1	1	MP	YES	SOME	NO	YES	a, b
HOPS	SDM	1	1	VWAP	YES	SOME	NO	NO	
LITGRID	SDM	1	1	VWAP	No		NO	NO	
MAVIR	SDM	1	1		YES	SOME	NO	YES	b, / d,
MEPSO									
National Grid	SDM	1	1	MP	YES	SOME	NO	NO	
NOS BiH	SDM	1	1	MP	YES	SOME	NO	NO	
OST									
PSE	CDM	Many.	Many.		YES	ALL	NO	NO	
REE	SDM	1 per bidding zone	1	VWAP	NO			YES	d
REN	SDM	1 per bidding zone	1	VWAP	NO		NO	YES	e
RTE	SDM	1	1	VWAP	NO		NO	NO	
SEPS	SDM	1	1	MP	YES	SOME	NO	No	
Statnett	SDM	1 per bidding zone/scheduling area (5)	1 per bidding	VWAP	NO		NO	YES	a, b (most
Svenska Kraftnät	SDM	1 per bidding zone/scheduling area (4)	1 per bidding	VWAP	NO			YES	a, b (most
Swissgrid	SDM	1	1	VWAP	NO		NO	NO	-
TenneT DE	SDM	1	1	MP	NO	Possibly a	YES,	NO	
TenneT NL	SDM	1	1	MP	YES	SOME	NO	YES	b
Terna	CDM	In Italy the definition of the imbalance settlement regulation is a NRA responsibility							
Transelectrica	SDM	1	1	VWAP	YES	ALL		Has been	Has been

Settlement cashflows pursuant EBGL

EBGL Title V, Cash flows



Description

Cashflows resulting from EBGL Title V Settlements, and involving TSOs (or third parties entrusted with such settlements).

BRP, BSP, TSO are according to EBGL; USER is the tariff payer.

Arrows denote direction of payments; some settlements may involve bidirectional payments, hence the double arrow.

Unbracketed numbers within the arrows refer to the respective Chapter in EBGL Title V, Settlements.

The payment to the TSO to remunerate payment of balancing capacity to BSP is assumed to be assigned to the USER.

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3.Pricing Proposal

Pavel Zolotarev
Convenor PT PSAP

Balancing Stakeholder group meeting Sep 3rd

EB GL Requirements



Art. 30: Pricing for balancing energy used for exchange or imbalance netting

- “[...] develop a proposal for a methodology to determine prices for the balancing energy that results from the activation of balancing energy bids for the **frequency restoration** [...] and the **reserve replacement** process [...].”

“Such methodology shall:

(a) be based on marginal pricing (pay-as-cleared)

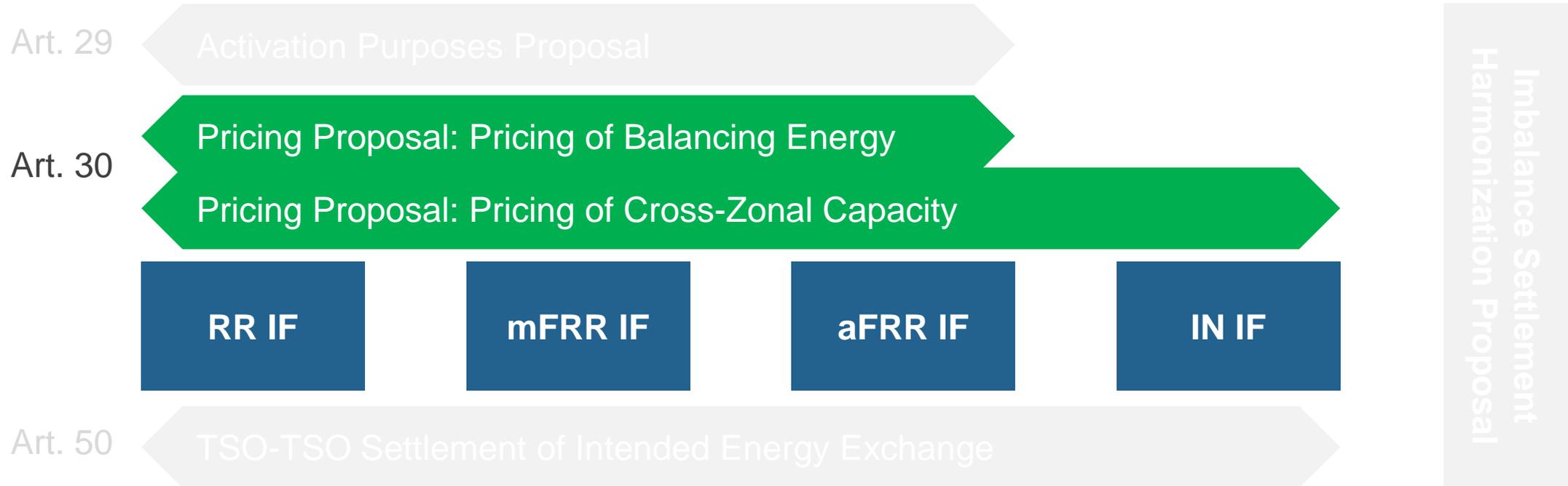
(b) define how [...] balancing energy bids activated for purposes other than balancing affects the balancing energy price [...].

Art. 50:

- “[...] common settlement rules applicable to all intended exchanges of energy [...] as a result of one or more of the following processes:
 - (a) the reserve replacement process
 - (b) the frequency restoration process with manual activation;
 - (c) the frequency restoration process with automatic activation;
 - (d) the imbalance netting process.”

Pricing and settlement proposals

Scope



Content

No.	Article	Remark
	Whereas	<i>explanation of how we fulfil EBGL</i>
1	Subject Matter and Scope	<i>in accordance with Article 30 EBGL</i>
2	Definitions	<i>definitions, consistent with IFs</i>
3	General Principles	<i>pricing methodology applicable to all processes</i>
4	Additional Provisions for the Pricing of Standard RR Balancing Energy Product Bids and Standard mFRR Balancing Energy Product Bids with Scheduled Activation Type	<i>specific aspects of the methodology for RR and scheduled mFRR</i>
5	Additional Provisions for the Pricing of Standard mFRR Balancing Energy Product Bids with Direct Activation Type	<i>specific aspects of the methodology for direct mFRR</i>
6	Additional Provisions for the Pricing of Standard aFRR Balancing Energy Product Bids	<i>specific aspects of the methodology for aFRR</i>
7	Pricing of Specific Products	<i>as much defined as possible</i>
8	Additional Provisions for Pricing for System Constraint Purpose Activations	<i>standard balancing energy bid selected for system constraint purpose remuneration</i>
9	Pricing of Cross-Zonal Capacity	<i>including imbalance netting</i>
10	Publication and Implementation of PP	<i>as in the IFs</i>
11	Language	<i>as in the IFs</i>

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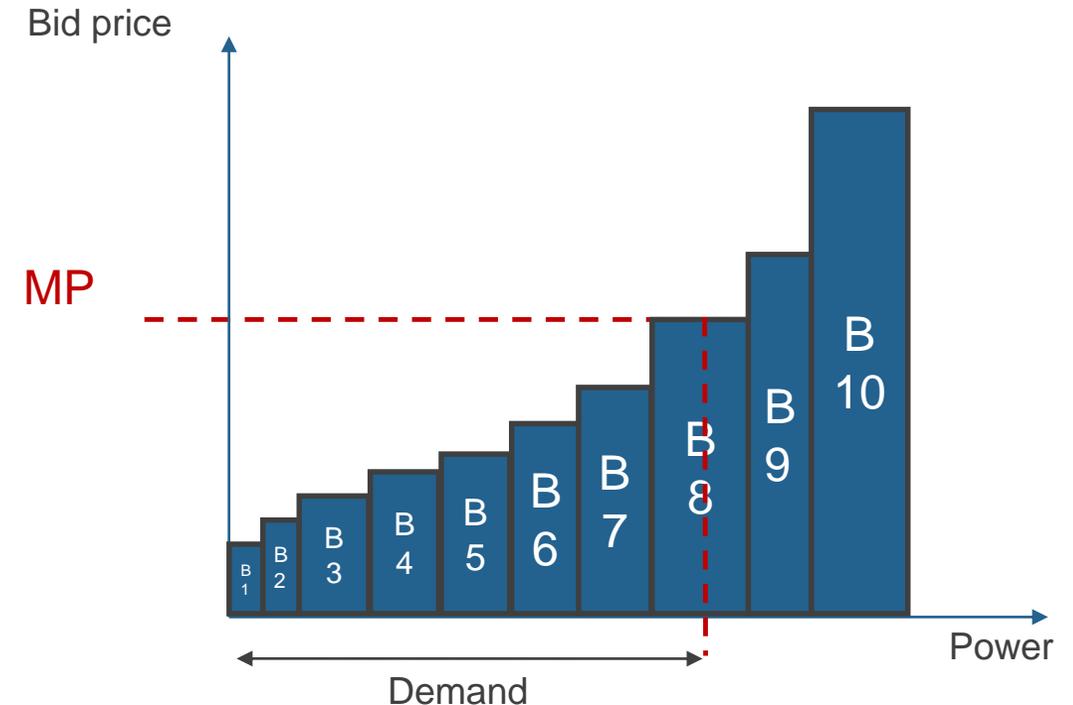
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Marginal Pricing as Basis for the Proposals

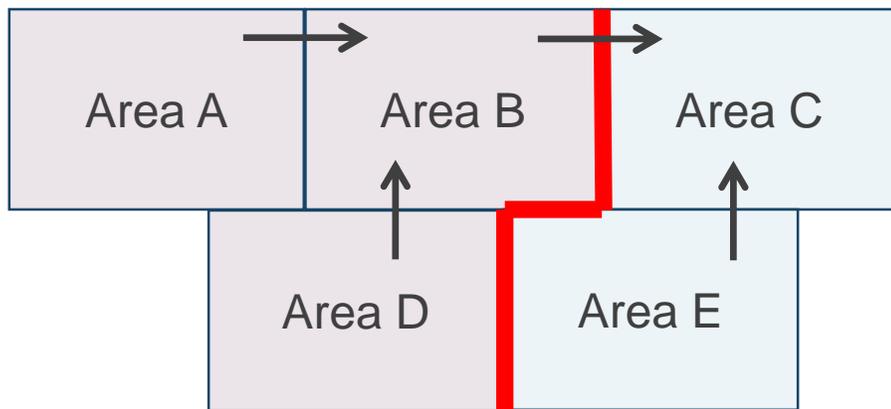
In this context, the Marginal Price (MP) represents the price of the last bid of a standard product which has been activated to cover the energy need for balancing purposes within a specified area.

- ▶ Same principle as day-a-head market
- ▶ Easy bid setting
- ▶ Lower bid prices (marginal cost bidding vs. markup in pay-as-bid)



Cross-Border Marginal Pricing (XBMP)

- The AOF will compute the balancing energy price per "uncongested area".
- In the case there is no congestions between adjacent areas, the price will be the same in these areas
- In case there is a congestion – there will be a price split (principally like the day-ahead market)
- In the case of evolving congestions, the uncongested areas for RR could be different than from mFRR. Also the uncongested areas for mFRR could be different from the uncongested areas for aFRR



- In this example there is a congestion on the borders B→C, B→E and D→E
- Area A,B and D have the marginal price MP1
- Area C and E have the marginal price MP2

- Uncongested area with marginal price = MP1
- Uncongested area with marginal price = MP2
- Balancing energy exchange on a border

One Product – One Price for each Period

... or in other words – there will be no cross-product pricing



The proposal foresees to apply the same XBMP for balancing and system constraint activation purpose (applicable in scheduled mFRR and RR).

General Principles

General Principles

- XBMP will be applied for standard product bids activated for balancing purpose
- One XBMP will be calculated in each platform

Article 3

(1) The price for balancing energy from standard product bids activated for balancing purpose shall be the XBMP of the respective process, in accordance with Article 4, Article 5 and Article 6 of the PP.

(2) The respective platform shall calculate one XBMP price for standard balancing energy bids selected for the balancing purpose for:

- (a) each BEPP;
- (b) each activation direction;
- (c) each uncongested area; and
- (d) each of the following standard balancing energy products selected for the balancing purpose:
 - i. standard RR balancing energy product;
 - ii. standard mFRR balancing energy product with scheduled activation type;
 - iii. standard mFRR balancing energy product with direct activation type;
 - iv. standard aFRR balancing energy product.

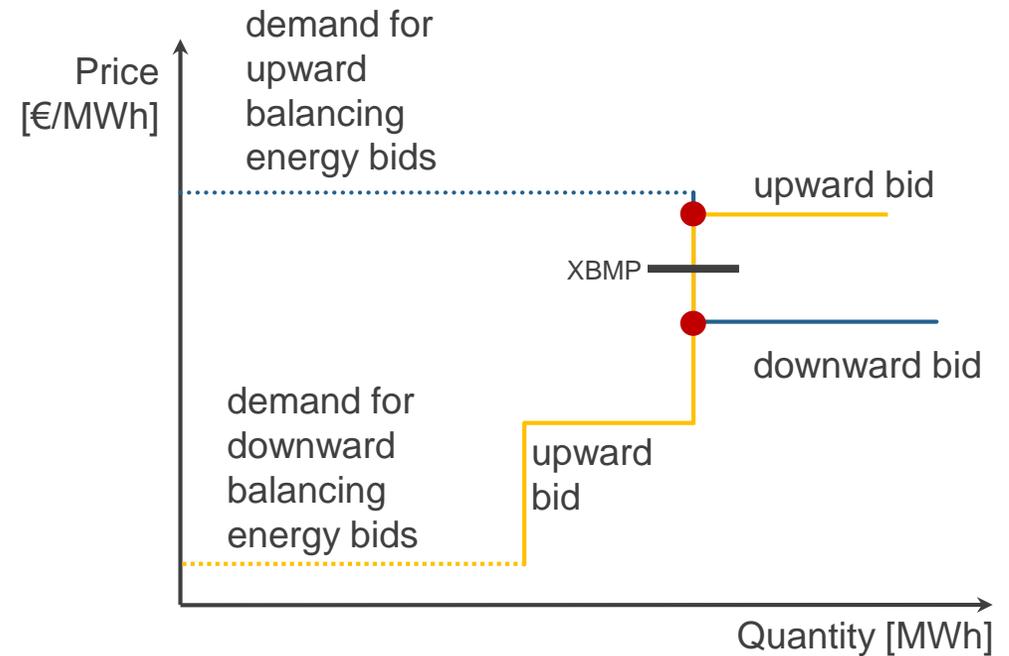
Price Indeterminacy

Price Indeterminacy

- There are cases where there is no unique intersection between the consumer / producer curves.
- For this situations, the proposal mentions that the AOF will determine the price

Article 3(3)

In case of price indeterminacy, the XBMP shall be determined by the AOF.



TSO-BSP Settlement

Settlement with BSP and Link to the Balancing Energy Volume

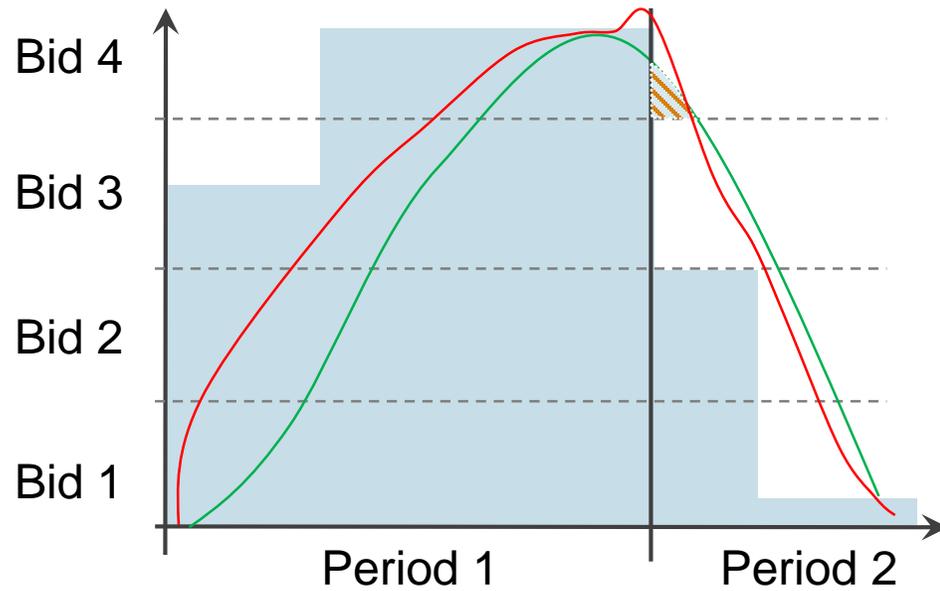
- In accordance with EBGL the balancing energy volume determination is defined in the national terms and conditions for BSPs.
- I.e. there could be mismatches between the XBMP which is the result of the platform and the price of the bid volume which was accepted locally, e.g. due to the dynamics of the local controllers. The proposal foresees that the respective volume of an upward bid will be settled with the bid price when the XBMP is lower (or when the XBMP is higher for a downward bid)

Article 3(4)

Each TSO shall:

- (a) determine the accepted bid energy volume in accordance with Article 45(2) of EBGL.
- (b) settle each accepted bid energy volume from a standard balancing energy product activated in upward direction with the maximum of the respective XBMP established in accordance with Article 4, Article 5 and Article 6 of the PP and the respective bid price in accordance with Article 47 and Article 48 of EBGL.
- (c) settle each accepted bid energy volume from a standard balancing energy product activated in downward direction with the minimum of the respective XBMP established in accordance with Article 4, Article 5 and Article 6 of the PP and the respective bid price in accordance with Article 47 and Article 48 of EBGL.

Dynamic effects in the aFRR process



- aFRR set-point
- aFRR delivery
- optimisation result
(possible selected bid definition)

Bid No.	Validity Period 1			Validity Period 2		
	Selected (by AOF)	Accepted (by TSO)	Activated (by BSP)	Selected (by AOF)	Accepted (by TSO)	Activated (by BSP)
Bid 1	yes	yes	yes	yes	yes	yes
Bid 2	yes	yes	yes	yes	yes	yes
Bid 3	yes	yes	yes	no	yes	yes
Bid 4	yes	yes	yes	no	yes	yes

- In aFRR, the **AOF result will not correspond to the aFRR set-point** and the **set-point** will not correspond to the **delivered aFRR**.
- Discrepancies between selected (by AOF), accepted (by TSO) and activated (by BSP) bids allows for different pricing methodologies to be applied for aFRR products.

Specific remuneration products

Specific product remuneration

- More information about specific products is provided in Article 7

Article 3(5)

Each TSO using specific products shall remunerate the respective accepted bid energy volume in accordance with Article 7 of the PP.

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RR and mFRR

Application of General Principles to RR and scheduled mFRR

- The “general principles” can be applied directly to RR and mFRR with scheduled activation.
- The price will be calculated by the AOF based on the result of the optimisation.
- The article defines the intersection point which is the XBMP
- The balancing pricing period (BEPP) is 15 min, i.e. there will be one price for 15 min.

Article 4

(1) The BEPP for standard RR balancing energy product bids and standard mFRR balancing energy product bids with scheduled activation type shall be 15 minutes. The first BEPP of each day shall begin right after 00:00 and end at 00:15. The BEPPs shall be consecutive and not overlapping.

(2) The XBMP for standard RR balancing energy product bids and standard mFRR balancing energy product bids with scheduled activation type in each uncongested area shall be equal to the price at the intersection of the consumer and supply curves which consist of:

- (a) selected bids and satisfied demands;
- (b) rejected upward bids or unsatisfied negative demands which have higher prices than the last selected upward bid or satisfied negative demand;
- (c) rejected downward bids or unsatisfied positive demands which have a lower price than the last selected downward bid or satisfied positive demand.

(3) Where there are no single intersection points between the consumer and supply curves as defined in paragraph (2), the cross-border marginal price is given by the price indeterminacy calculation in accordance with Article 3(3) of the PP.

Interconnection controllability (1/4)

- Interconnection Controllability:
 - For security reasons, TSOs can define limits for minimum / maximum flow to allow for control in certain system conditions.
- This concept is proposed to be incorporated in TERRE
- MARI is studying this possibility
- In order not to influence the marginal price due to activations for Interconnection Controllability actions, TSOs will run a constrained (with desired exchange) and an unconstrained (without desired exchange) algorithm
 - The activations result from the constrained run
 - The marginal prices result from the unconstrained run



Interconnection controllability (2/4)

Example



Algorithm run (unconstrained run) with ATC from TSO2 to TSO1 = 0, and ATC 1 to 2 = 50MW



TSO 1	50 € / MWh
TSO 2	40 € / MWh
TSO 3	40€ / MWh

BSP	TSO	Offer direction	Offer quantity (MW)	Offer price (€/MWh)	Activated quantity (MW)
1	1	Upward	40	50	20
2	1	Upward	50	60	0
3	2	Upward	60	60	0
4	2	Downward	50	-35	0
5	3	Upward	80	30	80
6	3	Upward	90	40	20
7	3	Downward	50	-5	0

Interconnection controllability (3/4)

Constrained run: Optimization considers desire flow and gives the following results



BSP	TSO	Offer direction	Offer quantity (MW)	Offer price (€/MWh)	Activated quantity (MW)
1	1	Upward	40	50	40
2	1	Upward	50	60	10
3	2	Upward	60	60	0
4	2	Downward	50	-35	0
5	3	Upward	80	30	70
6	3	Upward	90	40	0
7	3	Downward	50	-5	0

Interconnection controllability (4/4)

Optimization considers desire flow and gives the following results



TSO 1	50 € / MWh
TSO 2	40 € / MWh
TSO 3	40 € / MWh

BSP	TSO	Offer direction	Offer quantity (MW)	Offer price (€/MWh)	Activated quantity (MW)
1	1	Upward	40	50	40
2	1	Upward	50	60	10
3	2	Upward	60	60	0
4	2	Downward	50	-35	0
5	3	Upward	80	30	70
6	3	Upward	90	40	0
7	3	Downward	50	-5	0

- The Marginal Price is the result of the unconstrained run.
- Uplifts will be given to BSPs which were activated but had higher submitted, e.g. BSP1 and BSP2
- TSO(s) requesting the Interconnection Controllability will bear the extra costs

Content

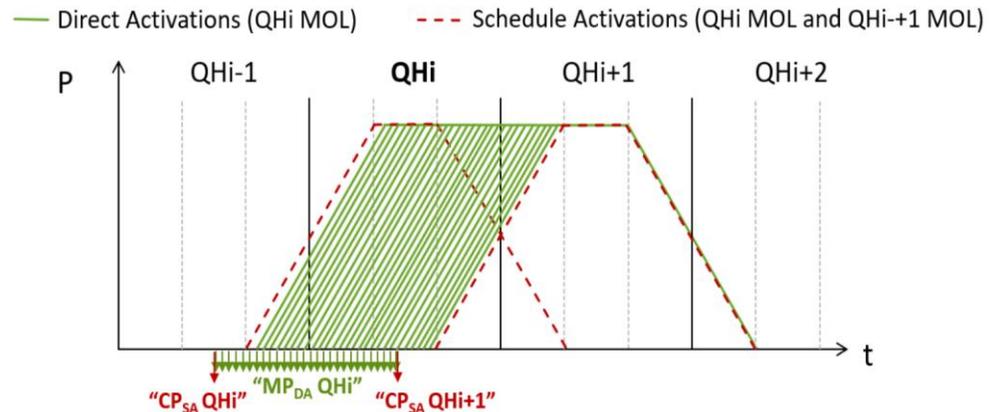
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Direct mFRR

Application of General Principles to direct mFRR

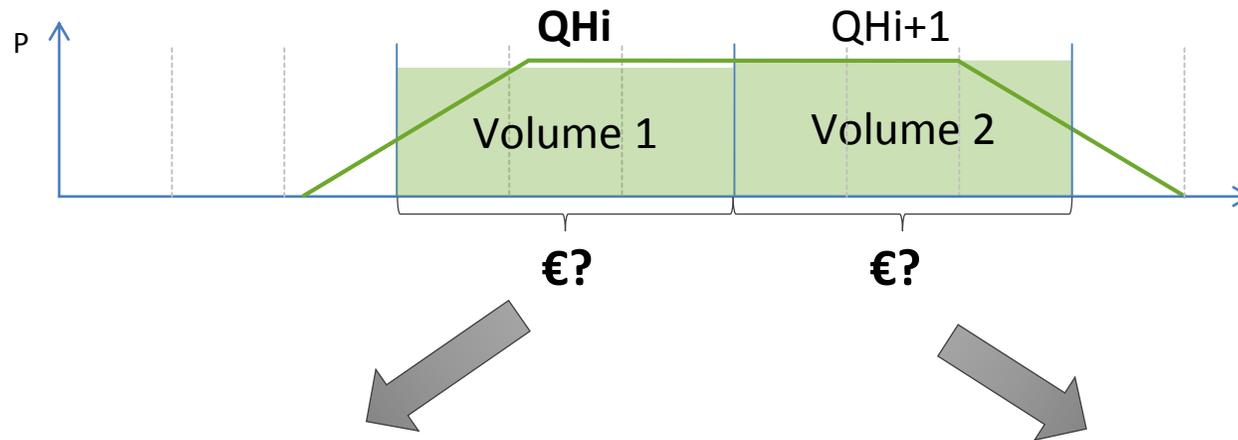
- Challenge for XBMP definition - there can be more than one activations of direct mFRR.
- Moreover, direct mFRR can be activated in parallel to the scheduled mFRR.
- The XBMP for the direct mFRR will be “floored” by the XBMP of the scheduled mFRR for the same BEPP (i.e. 15 min)



Article 5

- (1) The BEPP for standard mFRR balancing energy product bids with direct activation type shall be 15 minutes. The first BEPP of each day shall begin right after 00:00 and end at 00:15. The BEPPs shall be consecutive and not overlapping.
- (2) All standard mFRR balancing energy product bids with direct activation type selected by the activation optimisation function not earlier than 7.5 minutes before the beginning of the BEPP and no later than 7.5 minutes after the beginning of the BEPP shall be attributed to this BEPP. A part of the accepted bid energy volume is attributed to the subsequent BEPP.
- (3) The XBMP for all standard mFRR balancing energy product bids with direct activation type attributed to the same BEPP shall be the maximum of the price-components A and B for the positive activation direction and the minimum of A and B for the negative direction:
 - (a) The calculation of the price-component A is defined by paragraph (4) of this Article.
 - (b) The calculation of the price-component B is defined by paragraph (5) of this Article.
- (4) The price-component A comprises all selected bid prices of direct activations that have occurred within the quarter hour for which the bid is submitted in the respective uncongested areas.
- (5) For the part of the accepted bid energy volume of a direct activation of mFRR that is assigned to the BEPP corresponding to the quarter hour for which the bid is submitted, the price-component B is equal to the XBMP resulting from scheduled activation of mFRR for the same BEPP, whereas for the part of the accepted bid energy volume of a direct activation of mFRR that is assigned to the subsequent BEPP, the price-component B is equal to the XBMP resulting from scheduled activation of mFRR for the subsequent BEPP.

Pricing of direct activated mFRR



Settlement price for Direct Activated energy delivered in:	
QHi	QHi+1
$\text{MAXorMIN}(CP_{SA} QHi; MP_{DA} QHi)$	$\text{MAXorMIN}(CP_{SA} QHi+1; MP_{DA} QHi)$

Note the floor is different in the two ISP's as this is based on the clearing price of the scheduled activations

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aFRR

Application of General Principles to aFRR

- We propose a BEPP which is equal to the optimisation cycle of the AOF
- The calculation of the XBMP then follows the same principles as for RR or scheduled mFRR but without “complex” bids and without elastic demand which are not foreseen by the implementation framework

Article 6

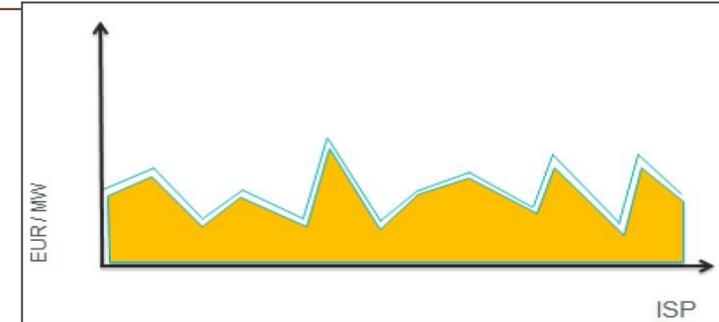
- (1) The BEPP for standard aFRR balancing energy product bids is equal to the optimisation cycle of the AOF.
- (2) The XBMP for selected standard aFRR balancing energy product bids in positive direction in an uncongested area shall be equal to the highest price of all selected standard aFRR balancing energy product bids in positive direction in the same uncongested area.
- (3) The XBMP for selected standard aFRR balancing energy product bids in negative direction in an uncongested area shall be equal to the lowest price of all selected standard aFRR balancing energy product bids in negative direction in the same uncongested area.
- (4) Where there are no single intersection points between the consumer and supply curves as defined in Article 4(2), the XBMP is given by the price indeterminacy calculation in accordance with Article 3(3).

BEPP for aFRR

- **BEPP equal to the optimisation cycle of the AOF:**
 - Provides a full consistency with the AOF results (bid selection, congestion, prices)
 - Maximises the occurrence of price convergence, hence maximises the competition among the BSPs.
 - This is seen as a critical element for markets with limited internal competition in order to efficiently apply a marginal pricing approach
 - Is simple and transparent from an algorithmic perspective (no need for an ex-post computation of the congestions)
 - Avoids arbitrarily increasing the BSP remuneration at the expense of the BRP
 - Avoids cases where the congestion rent is artificially increased, and cases where the congestion rent is negative
- Does not provide a full consistency between settlement period for BRPs (ISP) and BSPs (BEPP) where ISP is equal to 15 minutes
- Entails a certain complexity in terms of data handling

„Optimisation-cycle BEPP“

- The BSP settlement is settled on a optimisation-cycle basis (each 4 seconds currently)



	Optimisation cycle BEPP	Quarter-hour BEPP
BSP income	Lower	Higher
BRP cost of imbalances	Lower	Higher
Congestion rent	Lower	Higher in general (can also be negative)
Occurrence of price convergence	Higher	Lower

Content

No.	Article	Remark
	Whereas	<i>explanation of how we fulfil EBGL</i>
1	Subject Matter and Scope	<i>in accordance with Article 30 EBGL</i>
2	Definitions	<i>definitions, consistent with IFs</i>
3	General Principles	<i>pricing methodology applicable to all processes</i>
4	Additional Provisions for the Pricing of Standard RR Balancing Energy Product Bids and Standard mFRR Balancing Energy Product Bids with Scheduled Activation Type	<i>specific aspects of the methodology for RR and scheduled mFRR</i>
5	Additional Provisions for the Pricing of Standard mFRR Balancing Energy Product Bids with Direct Activation Type	<i>specific aspects of the methodology for direct mFRR</i>
6	Additional Provisions for the Pricing of Standard aFRR Balancing Energy Product Bids	<i>specific aspects of the methodology for aFRR</i>
7	Pricing of Specific Products	<i>as much defined as possible</i>
8	Additional Provisions for Pricing for System Constraint Purpose Activations	<i>standard balancing energy bid selected for system constraint purpose remuneration</i>
9	Pricing of Cross-Zonal Capacity	<i>including imbalance netting</i>
10	Publication and Implementation of PP	<i>as in the IFs</i>
11	Language	<i>as in the IFs</i>



Specific Products

Pricing of Specific Products

- The pricing of the specific products which are converted to standard products is based on the standard product bid price.
- Bid conversion and financial neutrality of the TSO must be “taken into account”.
- The pricing of specific products is not to be confused with the pricing of bids in the central dispatch models – the pricing of the latter is out of scope of the proposal

Article 7

Each TSO using specific products and submitting them to the common merit order list as a result of a bid conversion in accordance with Article 26(3)(a) of EBGL shall determine the price for the specific product bids representing the selected standard product bids taking into account:

- (a) XBMP for the respective standard balancing energy product bid;
- (b) bid conversion mechanism, where relevant;
- (c) financial neutrality of the TSO.

This topic must be also addressed at a national level

Content

No.	Article	Remark
	Whereas	<i>explanation of how we fulfil EBGL</i>
1	Subject Matter and Scope	<i>in accordance with Article 30 EBGL</i>
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10	Publication and Implementation of PP	<i>as in the IFs</i>
11	Language	<i>as in the IFs</i>



Pricing for System Constraint Purpose Activations

Additional Provisions for Pricing for System Constraint Purpose Activations

- The rules that will be applied for Pricing for System Constraint Purpose Activations

Article 8

(1) Each standard balancing energy bid selected for system constraint purpose shall be remunerated with its bid price if it fulfils the following criteria:

- (a) The bid is selected by the AOF in an optimisation with activation for system constraint purpose.
- (b) The upward bid price is higher than the XBMP of an optimisation without system constraint purpose but otherwise identical input parameters as the optimisation in (a).
- (c) The downward bid price is lower than the XBMP of an optimisation without system constraint purpose but otherwise identical input parameters as the optimisation in (a).

(2) Each standard balancing energy bid selected for system constraints purpose shall be remunerated with the XBMP if it fulfils the criterion (1)(a) but neither fulfils the criterion (1)(b) nor (1)(c).

Content

No.	Article	Remark
	Whereas	<i>explanation of how we fulfil EBGL</i>
1	Subject Matter and Scope	<i>in accordance with Article 30 EBGL</i>
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11	Language	<i>as in the IFs</i>



Pricing of Cross-Zonal Capacity

Pricing of Cross-Zonal Capacity

- The price of the CZC will be equal to the XBMP price difference on the borders.
- For the energy exchange which is performed in the framework of the imbalance netting platform the CZC price will be 0 €/MWh (since the imbalance netting platform does not include a common pricing of aFRR).

Article 8

- (1) The CZC price for balancing energy exchange resulting from activation of standard energy product bids shall be 0 €/MWh within an uncongested area and shall correspond to the difference between the XBMPs of the respective uncongested areas on the borders separating two uncongested areas.
- (2) The CZC price for energy exchange resulting from the imbalance netting process performed implicitly by the AOF for aFRR shall be 0 €/MWh within an uncongested area and shall correspond to the difference between the XBMPs of the respective uncongested areas on the borders separating two uncongested areas.
- (3) The CZC price for energy exchange resulting from imbalance netting process performed explicitly by the AOF for IN shall be 0 €/MWh.

Agenda: Topics lead by ENTSO-E

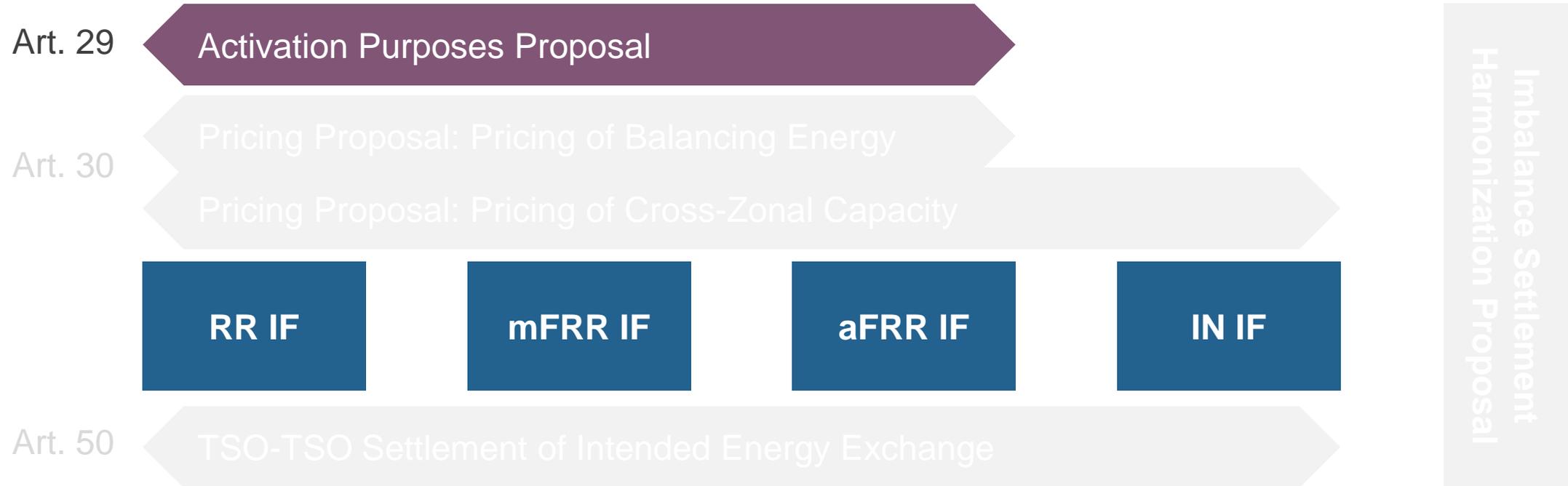
No.	Item	Time
2.	Imbalance settlement harmonisation proposal	40 min
3.	Pricing Proposal	80 min
4.	Activation purposes proposal	20 min
6.	aFRR implementation framework	45 min
7.	mFRR implementation framework	45 min

Activation Purposes

Pavel Zolotarev
Convenor PT PSAP

Activation Purposes Proposal

Scope



Activation Purposes

Process	Activation purpose: balancing	Activation purpose: system constraints*	Pricing for balancing purposes (not part of this proposal)	Example of pricing for system constraint purposes (not part of this proposal)
RR	yes	yes	XBMP	(a) \leq XBMP \rightarrow XBMP will be applied (b) $>$ XMBP \rightarrow Pay-as-bid will be applied
mFRR	yes	yes		
aFRR	yes	no		

*System constraints is an activation purpose which does not serve the frequency-control process targets in accordance with the SO GL (frequency restoration process and reserve replacement process)

Activation Purposes Proposal Structure

- The activation purposes proposal (APP) will be comparable to the implementation frameworks
- The APP is a short proposal.
- Draft structure:
 - Whereas
 - 1. Subject matter and scope – *in accordance with Article 29(3) of EB GL*
 - 2. Definitions and interpretation – *short definition list*
 - 3. Activation Purposes and Classification Criteria – *balancing and system constraints*
 - 4. Publication and implementation of the proposal – *cf. implementation frameworks*
 - 5. Language – *cf. implementation frameworks*

Agenda: Topics lead by ENTSO-E

No.	Item	Time
2.	Imbalance settlement harmonisation proposal	40 min
3.	Pricing Proposal	80 min
4.	Activation purposes proposal	20 min
6.	aFRR implementation framework	45 min
7.	mFRR implementation framework	

6 & 7. aFRR/mFRR Consultation Results

Benjamin Genêt – convener PICASSO

Martin Høgh Møller – convener MARI

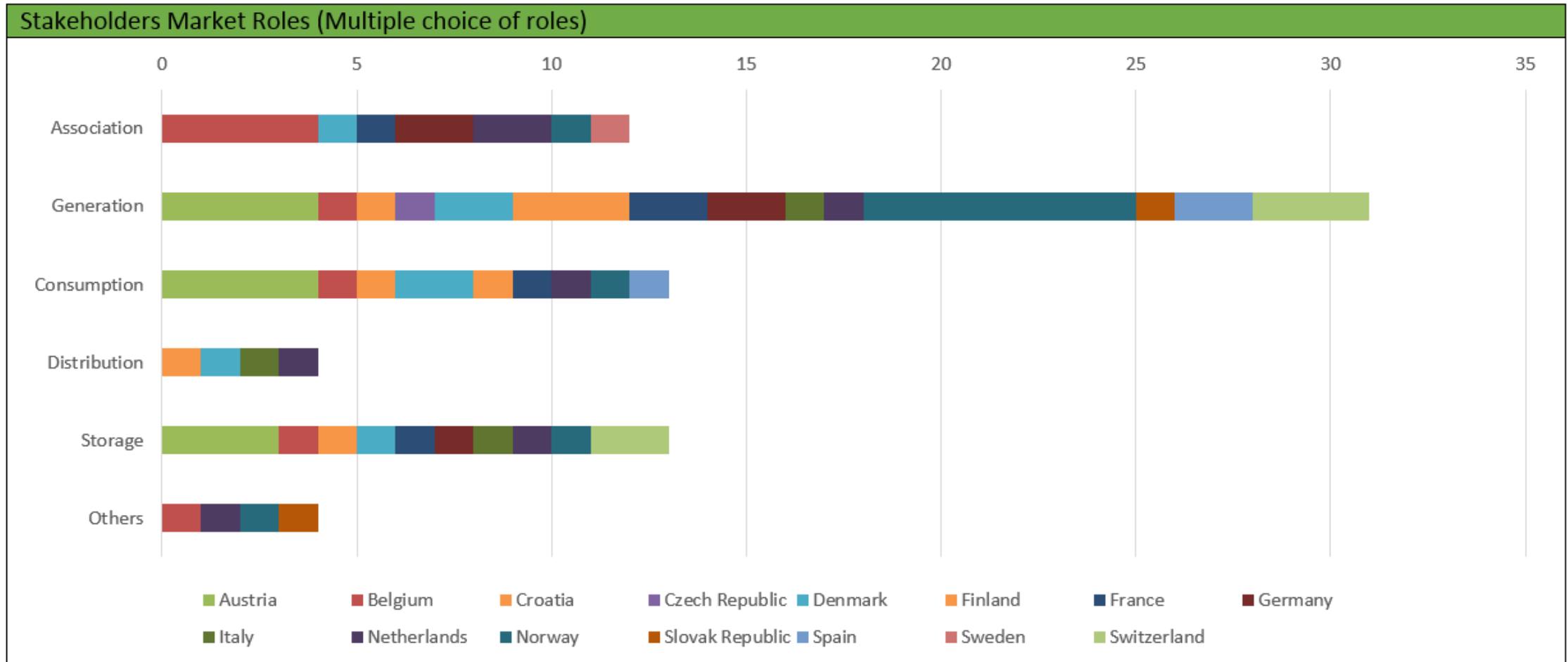
- 1. aFRR/mFRR Consultation – General Overview**
- 2. aFRR/mFRR Consultation – Common Comments**
- 3. aFRR Consultation – Specific Comments**
- 4. mFRR Consultation – Specific Comments**

- 1. aFRR/mFRR Consultation – General Overview**
2. aFRR/mFRR Consultation – Common Comments
3. aFRR Consultation – Specific Comments
4. mFRR Consultation – Specific Comments

1. aFRR IF Consultation – General Overview



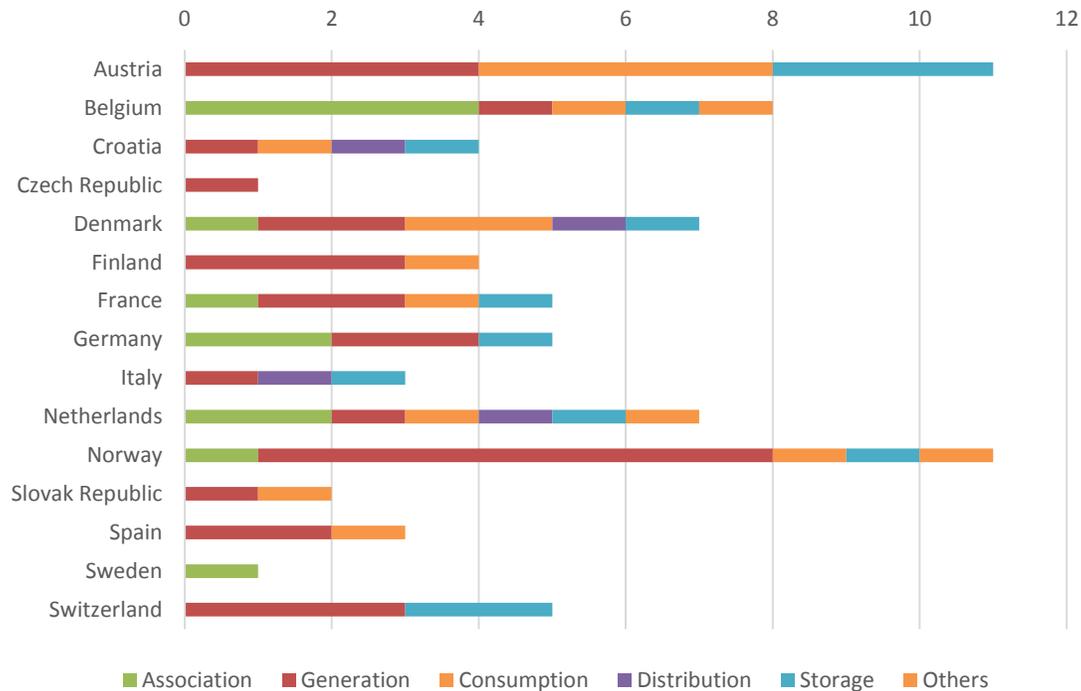
- ▶ Consultation was held from 26th April to 29th June
- ▶ In total 43 respondents took part:



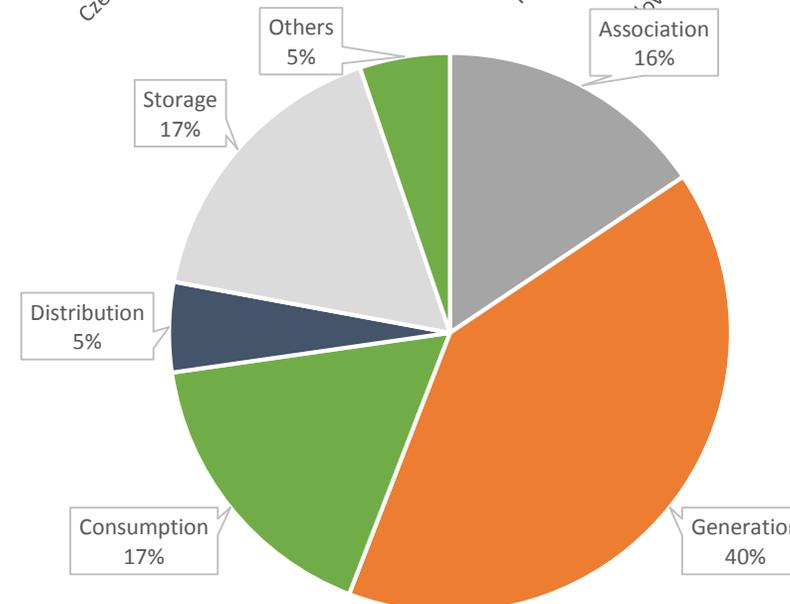
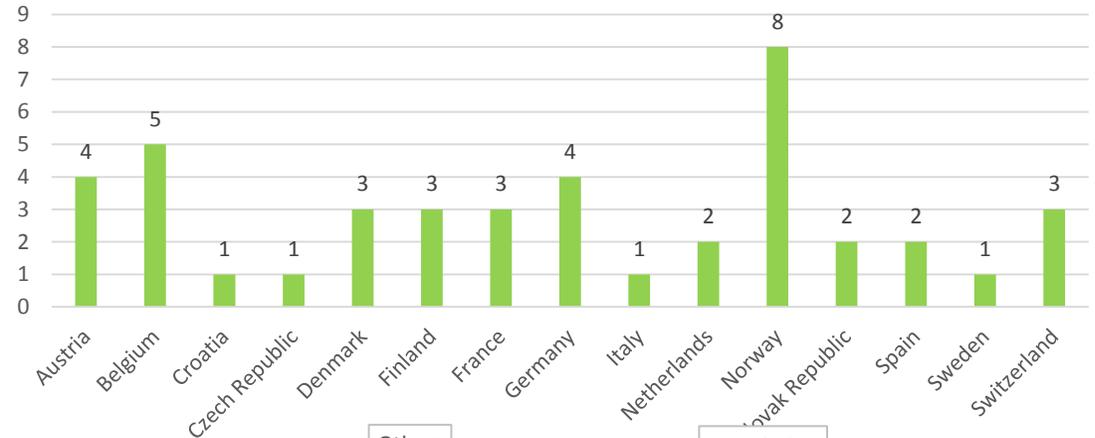
1. aFRR IF Consultation – General Overview



- ▶ Responses of 43 stakeholders from 15 countries of origin were collected.
- ▶ The market roles of stakeholders were identified by themselves to 6 categories.
- ▶ Majority of stakeholders is presented in Norway and Belgium, and major role is generation.



Number of participants by countries



1. aFRR IF Consultation – General Overview - Participants



Company	Country	Connected to TSO(s)
Agder Energi	Norway	Statnett
Alpiq AG	Switzerland	Swissgrid
Axpo Trading AG	Switzerland	Swissgrid
BDEW Bundesverband der Energie- und Wasserwirtschaft e.V.	Germany	
BKK Produksjon AS (BKPP)	Norway	Statnett
BKW Energie AG	Switzerland	Swissgrid
Bundesverband Neue Energiewirtschaft e.V. (bne)	Germany	
CEZ, a.s.	Czech Republic	CEPS
Danish Energy	Denmark	Energinet
EDF	France	RTE
EFET - European Federation of Energy Traders	Netherlands	
EnBw Energie Baden-Württemberg AG	Germany	TransnetBW, 50Hz, Amprion, Tennet DE
Enel	Italy	Terna, RED
Energi Danmark A/S	Denmark	Energinet, Fingrid, Statnett, Svenska Kraftnat, Tennet TSO (DE), TransnetBW (DE), Amprion (DE), 50Hertz Transmission
Energie-Nederland	Netherlands	TenneT NL
Energiföretagen Sverige - Swedenergy AB	Sweden	Svenska kraftnät
Energy Norway	Norway	Statnett SF
ENGIE	Belgium	Elia, TenneT NL, RTE, TenneT DE, 50 Hertz, Amprion, Terna, REE
Eurelectric	Belgium	
Eurowatt	France	RTE through the DSO Enedis
FEPEG	Belgium	Elia

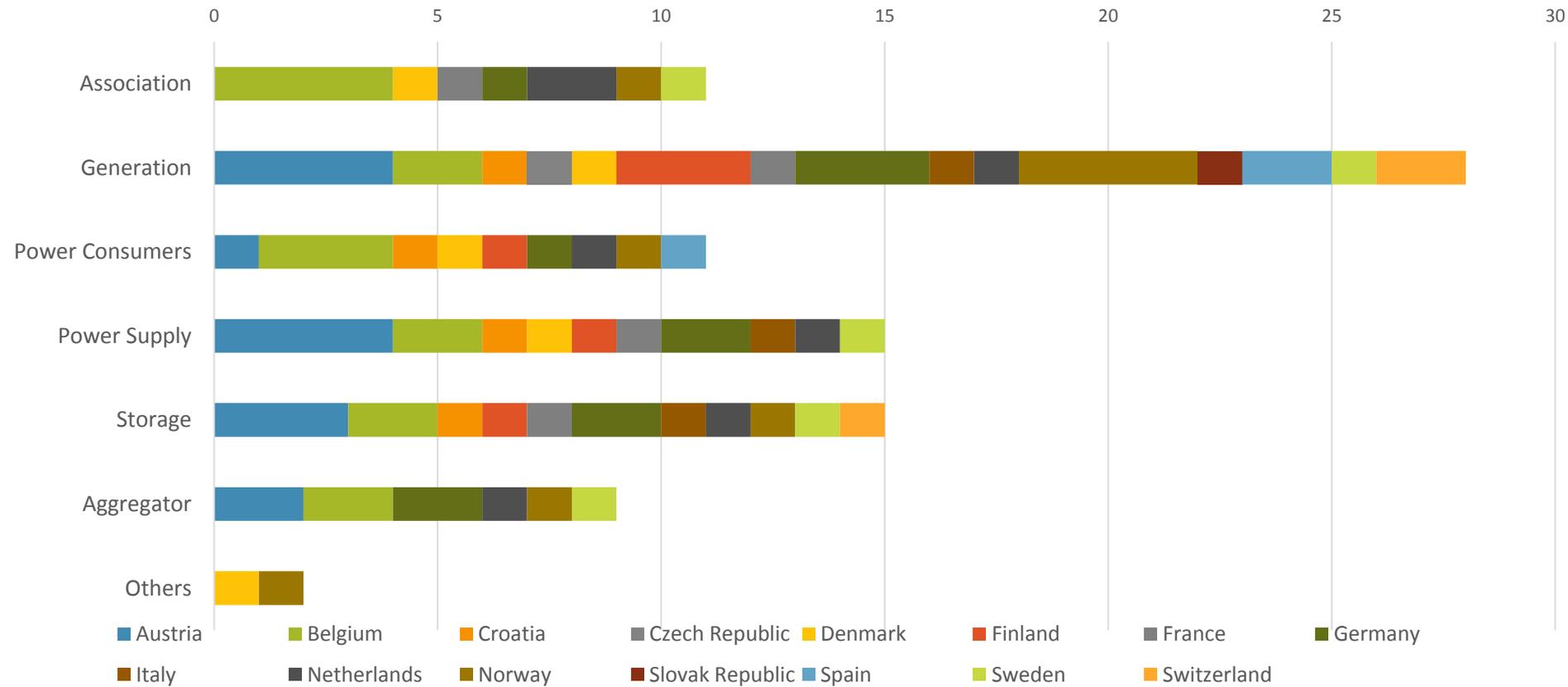
1. aFRR IF Consultation – General Overview – Participants part 2



Company	Country	Connected to TSO(s)
Fortum Oyj	Finland	Fingrid, Svenska Kraftnät, Statnett, Elering, Litgrid , AST
France Energie Eolienne (French Wind Energy Association)	France	RTE
HEP	Croatia	HOPS
Iberdrola Generación	Spain	REE
Kemijoki Oy	Finland	Fingrid
Lyse Produksjon AS	Norway	Statnett SF
Naturgy	Spain	REE
Nors Hydro	Norway	Statnett
Ørsted A/S	Denmark	Energinet, Tennet DE
Ostfold Energi AS	Norway	Statnett SF
RWE Supply & Trading GmbH	Germany	Amprion, Eia, TenneT NL, National Grid
SFE Produksjon AS	Norway	Statnett SF
Slovenske elektrarne, a. s.	Slovak Republic	SEPS
smartEn	Belgium	
Statkraft	Norway	Statnett, TenneT, Amprion, 50Hertz
Tepláreň Košice, a. s. v skratke TEKO, a. s.	Slovak Republic	SEPS
TIWAG-Tirolerwasserkraft AG - Dispatching	Austria	APG, TenneT, 50Hertz
UPM-Kymmene Oyj	Finland	Fingrid
Vorarlberger Illwerke AG	Austria	TransnetBW
Vorarlberger Kraftwerke AG	Austria	APG
Wien Energie GmbH	Austria	APG
WindEurope	Belgium	not relevant

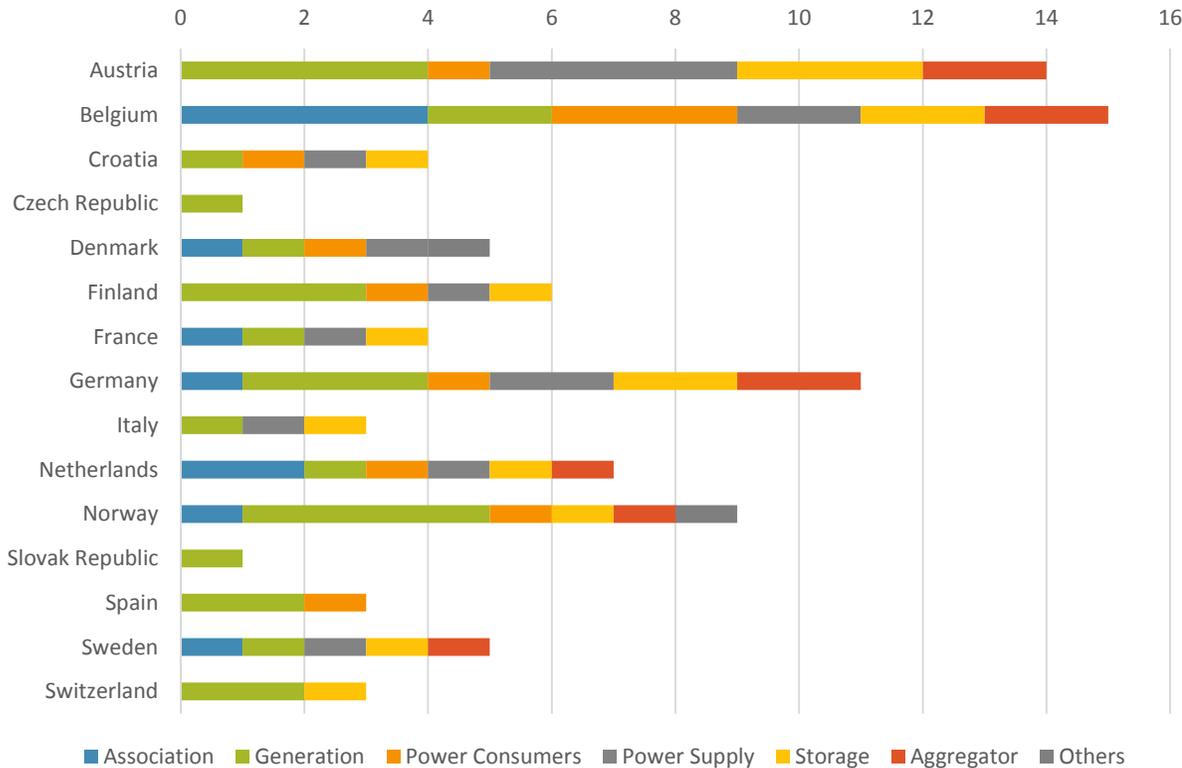
1. mFRR IF Consultation - General Overview

- 41 stakeholders from 17 countries
- Stakeholders Market Roles (Stakeholders had an option to choose multiple roles)

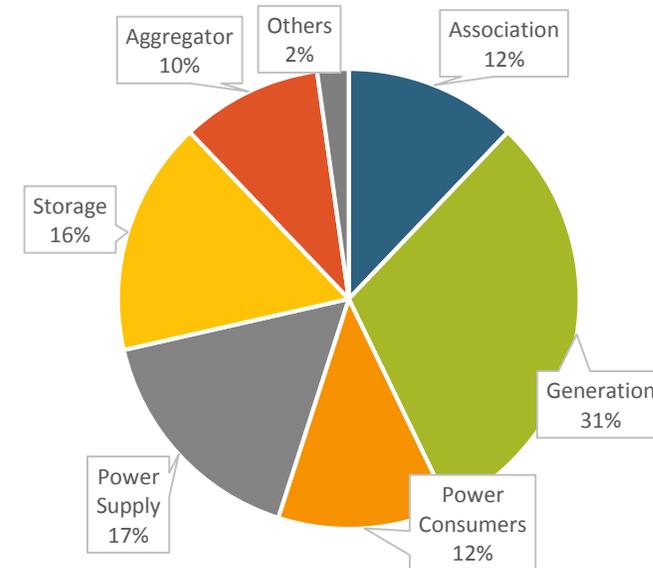
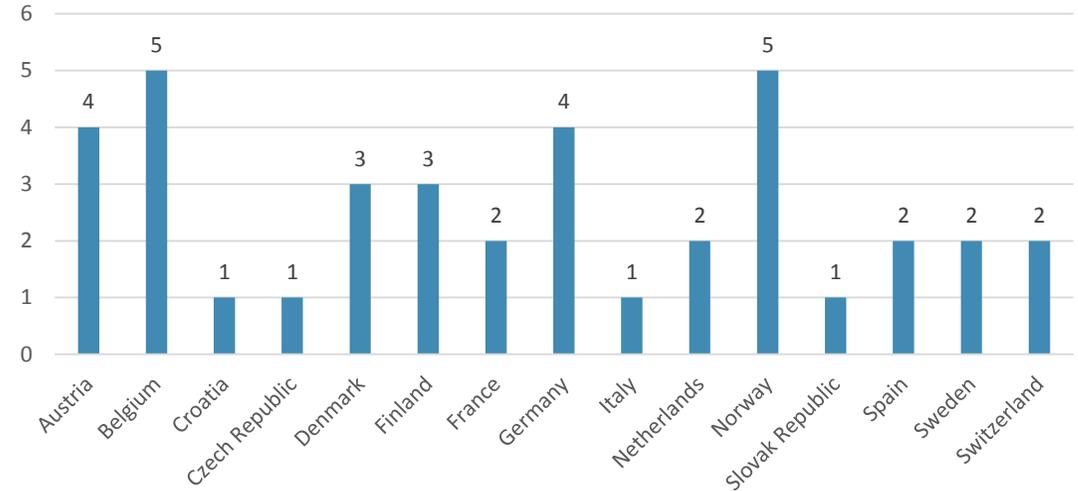


1. mFRR IF Consultation - General Overview

- ▶ There were released consultation questionnaire across 43 stakeholders from 15 countries.
- ▶ The market roles of stakeholders were identified by themselves to 7 categories.
- ▶ Majority of stakeholders is presented in Austria, Belgium, Germany and Norway, and major role is generation.



Number of participants by countries



1. mFRR IF Consultation - General Overview - Participants

Company	Country	Connected to TSO(s)
Alpiq AG	Switzerland	Swissgrid
Axpo Trading AG	Switzerland	Swissgrid AG
BDEW	Germany	50Hertz, Amprion, Tennet DE, TransnetBW
ČEZ, a.s.	Czech Republic	ČEPS
Danish Energy	Denmark	Energinet
EDF	France	RTE
EFET - European Federation of Energy Traders	Netherlands	All European TSOs (EU and beyond)
ELEXON Ltd	United Kingdom	National Grid, ESO
EnBW Energie Baden-Württemberg AG	Germany	TransnetBW, 50Hertz, Amprion, Tennet DE
Enel	Italy	Terna, RED
Energi Danmark A/S	Denmark	Energinet, Fingrid, Statnett, Svenska Kraftnat, Tennet DE, TransnetBW, Amprion, 50Hertz
Energi Norge	Norway	Statnett
Energie-Nederland	Netherlands	TenneT NL
Energiföretagen Sverige - Swedenergy AB	Sweden	Svenska Kraftnät
ENGIE	Belgium	Elia, TenneT NL, RTE, TenneT DE, 50Hertz, Amprion, Terna, REE, National Grid
Eurelectric	Belgium	N/A
FEPEG	Belgium	Elia
Fjernvarme Fyn	Denmark	Energinet.dk
Fortum Power and Heat Oy	Finland	Fingrid, Svenska Kraftnät, Statnett, Elering, AST, Litgrid
France Energie Eolienne (French Wind Energy Association)	France	RTE

1. mFRR IF Consultation - General Overview – Participants part II

Company	Country	Connected to TSO(s)
HEP Tegovina d.o.o (member of HEP group)	Croatia	HOPS
Iberdrola Generación	Spain	REE
IFIEC Europe (International Federation of Industrial Energy Consumers)	Belgium	All of them.
Kemijoki Oy	Finland	Fingrid
Lietuvos energijos gamyba, AB	Lithuania	Litgrid, AB
Lyse Produksjon AS	Norway	Statnett SF
National Grid Interconnectors	United Kingdom	Tennet NL, RTE, National Grid
Naturgy Energy Group	Spain	REE
Norsk Hydro	Norway	Statnett
RWE Supply & Trading GmbH	Germany	Amprion, ELIA, TenneT Netherlands, National Grid
SFE Produksjon	Norway	Statnett SF
Slovenske elektrarne, a.s.	Slovak Republic	SEPS
smartEn	Belgium	N/A
Statkraft	Norway	Statnett, Svenska Kraftnätt, National Grid, TenneT, Amprion, 50Hertz
Südvolt GmbH	Germany	Amprion, TransnetBW, 50 Hertz, TenneT
TIWAG-Tiroler Wasserkraft AG	Austria	APG, Amprion, TenneT DE, 50Hertz
UPM-Kymmene Oyj	Finland	Fingrid
Vattenfall	Sweden	Svenska kraftnätt
Vorarlberger Illwerke AG	Austria	Transnet BW
Vorarlberger Kraftwerke AG	Austria	APG
Wien Energie GmbH	Austria	APG

1. aFRR/mFRR Consultation – General Overview
- 2. aFRR/mFRR Consultation – Common Comments**
3. aFRR Consultation – Specific Comments
4. mFRR Consultation – Specific Comments

aFRR and mFRR Common Feedback



Proposals	Art. 1 – Full Picture	<ul style="list-style-type: none">The stakeholders regret that since there are not all proposals available a full picture about the platform cannot be made
	Art. 2 – Definitions	<ul style="list-style-type: none">Stakeholders are against the term “social welfare” and some prefer optimization across the platforms
	Art. 2 - Definitions	<ul style="list-style-type: none">Stakeholders express preference for 1 product only (not separated DA product) – tackled also under Art. 6)
	Art. 3 – High Level Design	<ul style="list-style-type: none">Stakeholders request details on TSO demand determination
	Art. 3 – High Level Design	<ul style="list-style-type: none">Appropriate monitoring procedures must be established to avoid any potential free-riding behavior/under-dimensioning due to full access to CMOLStakeholders miss the description of integration with the aFRR (PICASSO) platform
	Art. 3 – Integration with other platforms	<ul style="list-style-type: none">Stakeholders regret that allocation of cross-zonal capacity for different market is not addressed.
	Art. 3 – Transparency on unavailable bid	<ul style="list-style-type: none">Transparency on unavailable bids management is requested by the stakeholders.

aFRR and mFRR Common Feedback



Proposals

Art. 4- Roadmap

- Stakeholders ask what will happen with the current regional platforms when MARI becomes operational/ when MARI is delayed
- Stakeholders request to set out steps or criteria to designate the entity or entities that will operate the mFRR platform – to be covered under Article 11
- Development of new processes related to mFRR should be done by closely involving stakeholders
- BSPs must be granted sufficient time for implementation after NRAs approval

Art. 7/8 – BE GCT and TSO-TSO GCT

- Stakeholders request a harmonized gate opening time (BEGOT)
- Stakeholders request transparency for bid filtering
- Stakeholders request compensation for bids that were not activated due to set unavailability by TSO
- Stakeholders request coordination of the BE GCTs for different platforms (e.g. BE GCTs in the same time or in sequence)
- Possibility to change BE GCT without changing IF

aFRR and mFRR Common Feedback



Proposals	Art. 9 10 CMOL/ALG	<ul style="list-style-type: none">• Details on marking bids unavailable, objective structure function, fall back procedure
	Art. 11- Entities	<ul style="list-style-type: none">• Stakeholders request details on entities' designation
	Art. 12/13 - Governance	<ul style="list-style-type: none">• Stakeholders request details on how they will be involved during the implementation and operational phase
	Art. 14 – Cost Sharing	<ul style="list-style-type: none">• Few stakeholders propose to share the costs from go-live
	Art. 15 Harmonization	<ul style="list-style-type: none">• Stakeholders ask for more frequent surveys (annually) and also for the possibility to react on urgent issues• Some stakeholders are dissatisfied with the level of harmonisation and ask for more element (also mentioned under Art. 6)

1. aFRR/mFRR Consultation – General Overview
2. aFRR/mFRR Consultation – Common Comments
- 3. aFRR Consultation – Specific Comments**
4. mFRR Consultation – Specific Comments



Consultation feedback	Proposals	Art. 3 - Full Access to CMOL	<ul style="list-style-type: none"> • fear of lower dimensioning because of full access to CMOL <ul style="list-style-type: none"> ➤ limitation of access to CMOL at least at the beginning is asked • no discrimination of RES
		Art. 5 - CZC	<ul style="list-style-type: none"> • Detailed publications on the AOF functioning is requested • CZC allocation principles for balancing requested
		Art. 6 -FAT	<ul style="list-style-type: none"> • different proposals for FAT; general request for harmonization however no clear proposals acceptable by all
		Art. 7 and 8 - GCTs and GOT	<ul style="list-style-type: none"> • Stakeholder requested both earlier and later BEGCTs: • The majority of requests wanted a BEGCT of 15 minutes. A significant amount of responses (mainly German) aimed for a 60 minute BEGCT
		Art. 9 10 CMOL/ALG	<ul style="list-style-type: none"> • Details on marking bids unavailable, objective function structure, fall back procedure
		Counteract.	<ul style="list-style-type: none"> • Opposite argumentation about counter-activations



Consultation
feedback

Requests for
clarification

- publication of activation of bids
- more info about limitations in accordance to Art.150 SOGL asked
- more info about how future modifications on IF will be processed
- clarification on selection of bids asked
- info about activation and netting asked



Topic	Stakeholder Input
Minimum bid size	Request for increase or decrease
Bid granularity & divisibility	Request for clarification
Bid Validity Period	Proposal for 60 minutes, for starting at 7:30 minutes, and request for clarification of relationship with longer ISPs
Further harmonisation	Requests by multiple stakeholders for immediately more harmonisation or impact analysis of no further harmonisation
Symmetric bids	Question on how they should be offered
Missing information in IF	<ul style="list-style-type: none"> - Mention that bids need to be asymmetric - Include time reference in bid validity period - Include direction of bid and time resolution
Linked bids	Request for clarification on bid linking between mFRR and aFRR
Deactivation period	Request for clarification of deactivation time

1. aFRR/mFRR Consultation – General Overview
2. aFRR/mFRR Consultation – Common Comments
3. aFRR Consultation – Specific Comments
4. **mFRR Consultation – Specific Comments**

Consultation feedback

Proposals

Art. 6 – Standard Product

- Stakeholders are generally fine with a FAT=12.5 minutes. However, the majority asks to not go below this boundary (with the exception of two Stakeholders asking to lower it).
- URBs Support for proposed approach. However, a relevant number of Stakeholders asked for a clear statement that indivisible bids will be allowed without limitation is needed. Divisible bids should be incentivized over the indivisible bids (URDB).
- A few stakeholders support the need for two product (scheduled and direct). Other Stakeholders are in favor on having only one product (direct or scheduled) since they fear that having two products seriously hampers the effectiveness of the Platform and introduces too much complexity that could lead to a reduction of liquidity: the majority is in favor of having *only a scheduled product* in the MARI Platform.

Art. 6 – Standard Product - Linking

- Support for the current approach. However, few Stakeholders ask for having also an economical linking forward in time.
- Even though Stakeholders fully support the importance of technical linking, they ask to move the BEGCT to T-20 or closer to real time in order to give the chance to BSPs to update their bids by themselves (some Stakeholders stress that 5' are necessary for the update). If technical linking will remain in place, they ask for clear and transparent rules.

Art. 8 – BE GCT

- Some BSPs request BE GCT closer, some further away from real time

Topic	Stakeholder Input
Maximum bid quantity	Support maximum bid quantity of 9,999 MW
Bid granularity & divisibility	Some stakeholders request bid granulatiry of 0.1 MW
Bid Validity Period	<p>The validity periods for mFRR in article 6(3) are defined differently from aFRR:</p> <ul style="list-style-type: none"> - instead of calling it “Validity Period” it should be called “Time of activation”; - Validity period should be 30 minutes; - validity period should be similar to aFRR: period for which the BSP bid is valid for activation.
Further harmonisation	<ul style="list-style-type: none"> • Harmonization of product characteristics should be pushed as much as possible. In particular those characteristics listed in Art.25.4 in EB GL; • National rules should be minimized • Harmonization of general rules, penalties and pre-qualification requirement so as to ensure a level-playing field; • TSOs should not be able to impose additional, local obligations/characteristics on top of harmonised standard product requirements as it might lead to discrimination and is not ensuring a level playing field for BSPs • Try to boost the harmonization of the local market from unit-based market to portfolio market • Portfolio bidding shall be allowed irrespective of the connecting TSO
Maximum duration of delivery period	Request to clarify if maximum duration of delivery period it's left to national implementation or is between 5' and 20'. Stakeholders ask that this should be clearly stated in IF, not only in the ED.
Missing information in IF	- Mention that bids need to be symmetric
Minimum duration of the delivery period	Minimum duration of delivery period = 15' (not 5') due to a disproportional burden of implementation. Minimum duration of delivery period = 10' (not 5') due to operational/technical constraints
Accepted vs. Incentivized Shape	Request for clarity in IF and ED with respect to the existence of a “BSP-TSO incentivized shape” and the “BSP-TSO accepted shape”.

- TSOs engaged an independent algorithm analyst, in order to decide the topics listed below. The analysis is expected to be available in October

Topic	Stakeholders Consultation Feedback
Elastic Demand	Stakeholders against elastic demand The methodology applied by TSOS for determining the mFRR demand should be more transparent Stakeholder also request to include definition of the tolerance band into IF
1 vs 2 step approach	No comments
Counter - activations	Include design of counter-activation directly in IF + Scheduled counter activations of bids in uncongested areas shall not occur.
URBs	<ul style="list-style-type: none">• Request to include details on divisible URBs rules in the IF• Prefer to allow only indivisible URBs, as this would incentivize the divisibility of offers• Divisible bids should have prevalence over indivisible in the clearing process.

Consultation feedback	Proposals	Art. 9 – CMOL	<ul style="list-style-type: none"> • Unclear on whether there are 2 or 4 CMOLs (schedule and direct together or separately).
		Art. 10 – Algorithm	<ul style="list-style-type: none"> • Stakeholders request transparency for bid filtering • Stakeholders request compensation for bids that were not activated due to set unavailability by TSO
			<ul style="list-style-type: none"> • Clarifications requested at least for the ED: <ul style="list-style-type: none"> • The pricing rules (unforeseeably acceptance and rejection) • On when the minimization of mFRR exchange flows is applied • On the HVDC losses • Other points not only related to the algorithm: <ul style="list-style-type: none"> • Description of fallback processes • Description on the CZC allocation and limitation • Description of CZC usage between PICASSO and MARI direct activation • Transparency requirements: Publication of inputs to the algorithm; The optimization algorithm should be made open-source, including future developments.

**Thank you for your
attention!**
